

IN THE CLAIMS

Please amend claims 1, 4, 5, 21, 25, 32 and 35, cancel claims 12, 14, and 33, and add claims 40-44 as follows:

Claim 1 (Currently amended): A system for detecting ~~non-repeating~~ defects in a light-management film, the film having a first side and a second side, comprising:

a first light source configured to emit light onto the first side of the film in a first predetermined region of the film, ~~the first light source being disposed at least partially within a first conically shaped region, the first conically shaped region extending from the first predetermined region of the film outwardly from the first side having an apex proximate the first predetermined region, the first conically shaped region being centered about a first axis, the first axis extending through the first predetermined region of the film generally perpendicular to the film, the first conically shaped region extending around the first axis at a first predetermined angle within a range of 0 to 60 degrees;~~

a second light source configured to emit light onto the second side of the film in the first predetermined region of the film;

a first camera configured to receive a first portion of light reflected from the first predetermined region of film from the first light source and a second portion of the light propagating through the film from the second light source, the first camera further configured to generate a first image from the first and second portions of light; ~~the first camera being disposed at least partially within a second conically shaped region, the second conically shaped region extending from the first predetermined region of film outwardly from the first side and having an apex proximate the first predetermined region, the second conically shaped region being centered about the first axis, the second conically shaped region extending around the first axis at a second predetermined angle within a range of 0 to 60 degrees;~~

a third light source configured to emit light onto the second side in a second predetermined region of the film;

a fourth light source configured to emit light onto the first side of the light-management film in the second predetermined region of the film;

a second camera configured to receive a third portion of light reflected from the second predetermined region of film from the third light source and a fourth portion of the light propagating through the film from the fourth light source, the second camera further configured to generate a second image from the third and fourth portions of light; and

a signal-processing device operably coupled to the first and second cameras, the signal-processing device configured to provide a summed image by summing the first and second images, the signal-processing device further configured to detect a-at least one defect in the first predetermined region of the film based on the summed image-at least one of the first and second portions of light.

Claims 2-3 (Canceled).

Claim 4 (Currently amended): The system of claim ~~1~~ 42, wherein the second light source is disposed at least partially within a third conically shaped region, the third conically shaped region extending from the first predetermined region of film outwardly from the second side and having an apex proximate the first predetermined region, the third conically shaped region being centered about the first-axis, the third conically shaped region extending around the first-axis at ~~the~~ a third predetermined angle.

Claim 5 (Currently amended): The system of claim ~~1~~ 4, wherein the third predetermined angle is within a range of 0 to 60 degrees.

Claims 6-10 (Canceled).

Claim 11 (Original): The system of claim 1, wherein the first camera comprises a CCD camera.

Claim 12 (Canceled).

Claim 13 (Original): The system of claim 1, wherein the first camera is out of focus by a predetermined amount.

Claim 14 (Cancelled).

Claim 15 (Currently Amended): The system of claim-14 1, wherein the second camera is disposed at least partially within a ~~third~~ first conically shaped region, the ~~third~~ first conically shaped region extending from the second predetermined region of film outwardly from the second side and having an apex proximate the second predetermined region, the ~~third~~ first conically shaped region being centered about a ~~second~~ an axis, the ~~second~~ axis extending through the second predetermined region of film generally perpendicular to the film, the ~~second~~ first conically shaped region extending around the ~~second~~ axis at a ~~third~~ first predetermined angle.

Claim 16 (Currently Amended): The system of claim 15, wherein the ~~third~~ first predetermined angle is within a range of 0 to 60 degrees.

Claim 17 (Currently Amended): The system of claim 15, wherein the fourth light source is disposed at least partially within a ~~fourth~~ second conically shaped region, the ~~fourth~~ second conically shaped region extending from the second predetermined region of film outwardly from the first side and having an apex proximate the second predetermined region, the ~~fourth~~ second conically shaped region being centered about the ~~second~~ axis, the ~~fourth~~ second conically shaped region extending around the ~~second~~ axis at a ~~fourth~~ second predetermined angle.

Claim 18 (Currently Amended): The system of claim 17, wherein the ~~fourth~~ second predetermined angle is within a range of 0 to 60 degrees.

Claim 19 (Currently Amended): The system of claim 17, wherein the third light source is disposed at least partially within a ~~fifth~~ third conically shaped region, the ~~fifth~~ third conically shaped region extending from the second predetermined region of film outwardly from the second side and having an apex proximate the second predetermined region, the ~~fifth~~ third conically shaped region being centered about the ~~second~~ axis, the ~~fifth~~ third conically shaped region extending around the axis at a ~~fifth~~ third predetermined angle.

Claim 20 (Currently Amended): The system of claim 19, wherein the ~~fifth~~ third predetermined angle is within a range of 0 to 60 degrees.

Claim 21 (Currently amended): A method for detecting ~~non-repeating~~ defects in a light-management film having a first side and a second side, the method comprising:

emitting light from a first light source onto the first side of the light-management film in a first predetermined region of the film;

emitting light from a second light source onto the second side of the light-management film in the first predetermined region of the film;

generating a first digital image from a first portion of the light reflected from the first predetermined region of film from the first light source and a second portion of the light propagating through the first predetermined region of film from the second light source, utilizing a first camera;

~~generating a second digital image from a second portion of the light propagating through the film from the second light source;~~

emitting light from a third light source onto the second side of the light-management film in a second predetermined region of the film;

emitting light from a fourth light source onto the first side of the light-management film in the second predetermined region of the film;

generating a second digital image from a third portion of the light reflected from the second predetermined region of film from the third light source and a fourth portion of the light propagating through the second predetermined region of film from the fourth light source, utilizing a second camera;

summing the first and second digital images to obtain a summed image; and

detecting ~~a~~ at least one defect in the film based on the summed image.

Claims 22-24 (Canceled).

Claim 25 (Currently amended): A system for detecting ~~repeating~~ defects in a light-management film, the film having a first side and a second side, comprising:

first and second light sources configured to emit light simultaneously onto the first and second sides, respectively, of a portion of the film;

a first camera disposed adjacent the first side of the film proximate the first light source that receives transmissive and reflected light from the film and generates a first plurality of

digital images of the film covering a first region of the film to a second region of the film as the film moves in an axial direction;

third and fourth light sources configured to emit light onto the first and second sides, respectively, of the film, the third light source emitting light during a first predetermined time period when the fourth light source is not emitting light, the fourth light source emitting light during a second predetermined time period after the first predetermined time period when the third light source is not emitting light;

a second camera disposed adjacent the second side of the film proximate the fourth light source that receives either transmissive or reflected light from the film and generates a second plurality of digital images of the film covering the first region of the film to the second region of the film as the film moves in the axial direction; and

a signal-processing device operably coupled to the first and second cameras configured to detect the ~~repeating~~ at least one defect in the film based on the first and second plurality of digital images, the signal processing device further configured to indicate that a repeating defect was detected based on the at least one defect being reproduced at predetermined intervals in the film.

Claim 26 (Original): The system of claim 25, wherein the first camera is disposed at least partially within a first conically shaped region, the first conically shaped region extending from the first predetermined region of film outwardly from the first side and having an apex proximate the first predetermined region, the first conically shaped region being centered about a first axis, the axis extending through the first predetermined region of film generally perpendicular to the film, the first conically shaped region extending around the first axis at a predetermined angle.

Claim 27 (Original): The system of claim 26, wherein the predetermined angle is within a range of 0 to 60 degrees.

Claim 28 (Original): The system of claim 26, wherein the second light source is disposed at least partially within a second conically shaped region, the second conically shaped region extending from the first predetermined region of film outwardly from the second side and having an apex proximate the first predetermined region, the second conically shaped region being

centered about the first axis, the second conically shaped region extending around the first axis at the predetermined angle.

Claim 29 (Original): The system of claim 28, wherein the predetermined angle is within a range of 0 to 60 degrees.

Claim 30 (Original): The system of claim 28, wherein the first light source is disposed at least partially within a third conically shaped region, the third conically shaped region extending from the first predetermined region of film outwardly from the first side and having an apex proximate the first predetermined region, the third conically shaped region being centered about the first axis, the third conically shaped region extending around the first axis at a second angle.

Claim 31 (Original): The system of claim 30, wherein the second angle is within a range of 0 to 60 degrees.

Claim 32 (Currently amended): A method for detecting repeating defects in a light-management film having a first side and a second side, the method comprising:

moving the film past first and second light sources disposed proximate the first and second sides, respectively, of the film;

emitting light simultaneously from the first and second light sources onto the first and second sides, respectively, of a portion of the film;

generating a first plurality of digital images of the film covering a first region of the film to a second region of the film using a first camera disposed adjacent the first side of the film that receives transmissive and reflected light from the film;

moving the film past a third light source and a fourth light source disposed proximate the first and second sides, respectively, of the film;

emitting light from the third light source onto the first side for a first predetermined time period while not emitting light from the fourth light source and then emitting light from the fourth light source onto the second side for a second predetermined time period while not emitting light from the third light source;

generating a second plurality of digital images of the film covering the first region of the film to the second region of the film using a second camera disposed adjacent the second side of the film that receives either transmissive or reflected light from the film; and

detecting ~~a repeating~~ at least one defect in the film based on the first and second plurality of digital images; and

indicating that a repeating defect was detected based on the at least one defect being reproduced at predetermined distance intervals in the film.

Claim 33 (Canceled)

Claim 34 (Original): The method of claim 32, wherein the first camera is disposed at least partially within a first conically shaped region, the first conically shaped region extending from the first predetermined region of film outwardly from the first side and having an apex proximate the first predetermined region, the first conically shaped region being centered about a first axis, the axis extending through the first predetermined region of film generally perpendicular to the film, the first conically shaped region extending around the first axis at a predetermined angle.

Claim 35 (Currently amended): The method of claim ~~33~~ 34, wherein the predetermined angle is within a range of 0 to 60 degrees.

Claim 36 (Original): The method of claim 34, wherein the second light source is disposed at least partially within a second conically shaped region, the second conically shaped region extending from the first predetermined region of film outwardly from the second side and having an apex proximate the first predetermined region, the second conically shaped region being centered about the first axis, the second conically shaped region extending around the first axis at the predetermined angle.

Claim 37 (Original): The method of claim 36, wherein the predetermined angle is within a range of 0 to 60 degrees.

Claim 38 (Original): The method of claim 36, wherein the first light source is disposed at least partially within a third conically shaped region, the third conically shaped region extending

from the first predetermined region of film outwardly from the first side and having an apex proximate the first predetermined region, the third conically shaped region being centered about the first axis, the third conically shaped region extending around the first axis at a second angle.

Claim 39 (Original): The method of claim 38, wherein the second angle is within a range of 0 to 60 degrees.

Claim 40 (New): The system of claim 1, wherein the first light source is disposed at least partially within a first conically shaped region, the first conically shaped region extending from the first predetermined region of the film outwardly from the first side having an apex proximate the first predetermined region, the first conically shaped region being centered about an axis, the axis extending through the first predetermined region of the film generally perpendicular to the film, the first conically shaped region extending around the axis at a first predetermined angle.

Claim 41 (New): The system of claim 40, wherein the first predetermined angle is within a range of 0 to 60 degrees.

Claim 42 (New): The system of claim 40 wherein the first camera is disposed at least partially within a second conically shaped region, the second conically shaped region extending from the first predetermined region of film outwardly from the first side and having an apex proximate the first predetermined region, the second conically shaped region being centered about the axis, the second conically shaped region extending around the axis at a second predetermined angle.

Claim 43 (New): The system of claim 42, wherein the second predetermined angle is within a range of 0 to 60 degrees.

Claim 44 (New): A method for detecting repeating defects in a light-management film having a first side and a second side, the method comprising:

moving the film past first and second light sources disposed proximate the first and second sides, respectively, of the film;

emitting light from the first and second light sources onto the first and second sides, respectively, of the film;



generating a first plurality of digital images of the film covering a first region of the film to a second region of the film using a first camera disposed adjacent the first side of the film that receives transmissive and reflected light from the film;

moving the film past third and fourth light sources disposed proximate the first and second sides, respectively, of the film;

emitting light from the third light source onto the first side for a first predetermined time period while not emitting light from the fourth light source and then emitting light from the fourth light source onto the second side for a second predetermined time period while not emitting light from the third light source;

generating a second plurality of digital images of the film covering the first region of the film to the second region of the film using a second camera disposed adjacent the second side of the film that receives either transmissive or reflected light from the film; and

detecting a repeating defect in the film based on the first and second pluralities of digital images, wherein detecting the repeating defect comprises:

summing each of the first plurality of digital images with a corresponding image of the second plurality of digital images to obtain a summed digital image of the first region to the second region of the film;

detecting first, second, and third defects using the summed digital image and storing first, second, and third coordinates associated with the first, second, and third defects, respectively, in a memory; and

determining that the repeating defect is present when an axial distance between the first and second coordinates is substantially equal to an axial distance between the second and third coordinates.